# Setting up a UPS with TrueNAS

TrueNAS supports monitoring UPS' using the open source Network UPS Tool (aka NUT). While they have done a good job of automating discovery, sometimes it is difficult to figure out which device is which when a UPS is plugged into a USB port.

## Find UPS plugged into a USB port

The command

```
usbconfig
```

is your friend here. In this real life case, I found the Cyberpower PR1500 plugged in at ugen0.4.

```
ugen0.4: <CyberPower Systems PR1500LCDRTXL2U> at usbus0, cfg=0 md=HOST
spd=LOW (1.5Mbps) pwr=ON (50mA)
```

It is on bus 0, port 4, so look for the direct link to that. It will either be called ugen* or uhid* in /dev

```
ls -ablph /dev/ugen* ; ls -ablph /dev/uhid*
```

This shows all entries named ugen* or uhid*, with the link that it actually points to.

```
lrwxr-xr-x  1 root  wheel     9B Nov 18 17:55 /dev/ugen0.4 -> usb/0.4.0
```

So, the device it is hooked up to is /dev/ugen0.4.

## Setting up the UPS

Open the TrueNAS WebUI and go to Services, then Actions for UPS

1. Identifier: ups (or anything you want)
2. UPS Mode: Master
3. Driver: find something close. For my PR1500, I used PR6000
4. Port: auto (or choose ugen0.4 that you found above)
5. Shutdown: UPS goes on battery
6. Shutdown Timer: 600 (seconds, or 10 minutes)
7. Save

## Testing

Start the UPS service. You can now drop to the shell and run the command:

```
upsc ups
```

where 'ups' is the name you chose as Identifier.

If it all appears to be working, put a check for Automatically start. NOTE: you can view some stats on the UPS under Reporting.

## ipmi shows a difference

If you use ipmitool to display the amount of power the server is using

```
ipmitool sensor
```

You might see a different number than the power your UPS is showing with

```
upsc ups
```

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First, ipmitool is probably showing *Watts* while the UPS may be showing *Volt-Amps* (VA). In an AC circuilt, these can be different.

Second, your UPS uses additional power to keep the batteries topped off, and also just for some internal circuitry, so it should show a different power (higher) than what your server actually uses.

On my setup, with a Cyberpower UPS powering an older Dell server, I used the command:

```
ipmitool sensor | grep 'Power Meter' | cut -d'|' -f2
upsc ups | egrep 'ups.load|ups.realpower.nominal'
```

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